# KANSAS MEDICAL JOURNAL.

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## ORIGINAL ARTICLES.

### Tuberculosis of Bones.

BY MILO B. WARD, M.D., TOPEKA, KAS.

Read at the March Meeting of the Topeka Academy of Medicine and Surgery.

Reluctantly consenting to prepare a paper on surgery for the academy, the writer has chosen the subject of tubercular diseases of bones and joints.

The time is too limited to attempt anything further than a brief reference to some of the most practical facts relative to this very common disease.

In the preparation of this epitomized presentation of this subject, it has been found necessary to make liberal references from the elaborate and classical writings of our Nicholas Senn, whose conclusions are entitled to the fullest respect regarding every phase of the subject under consideration.

Tuberculosis of bones may first be divided into general and local.

Senn says that 95 out of 100 cases of inflammation of bone is tuberculosis.

Tubercular infection may be found in ends of long bones and joints, bodies of vertebræ, carpus, tarsus, and skull, and in children often attacks phalanges and metacarpals.

More frequently than is commonly suspected, tuberculosis affects the shafts of long bones.

Tuberculosis of the bones is most frequently found in children and young adults.

*Etiology.*—Bone tuberculosis is a secondary infection, and is an evidence that there is, or has been, a tubercular focus in some other organ.

When the bacilli of tuberculosis are present in the blood current, very often localization takes place near the epipyseal cartilage in young persons, by the microbe becoming arrested in one of the terminal branches of the artery, the lumen of which becomes obliterated by the presence of a minute embolus of granulation tissue containing bacilli; or the lumen of the vessels is gradually diminished by the formation of a mural thrombus, which forms around bacilli implanted upon the vessel-wall, and the lumen of the vessel is finally completely obstructed by the growth of the thrombus. Senn thinks that the influence of traumatism in the etiology of tuberculosis of bones and joints has been greatly over estimated.

Traumatism doubtless has much to do with the manifestation of tubercular infection by bringing about an active congestion and thereby lighting the fuel that has been hidden in the tissues, thus creating the destructive inflammation, which, without the traumatism would perhaps not manifest itself for an indefinite period. It has been proven that slight traumatism to a joint would determine localization of the microbes floating in the blood current in the part injured, and that a tubercular synovitis or perarthritis would follow.

Kummer claims that in localized osseous or articular tuberculosis, only about 40 per cent. are primary, and in the other 60 per cent. deposits are found at the same time in other parts of the body. The lungs come first with 25 per cent; other joints 10 per cent; other bones 10 per cent; lymphatic glands 10 per cent; peritoneum 3 per cent; pleura 2 per cent.

*Pathology and Morbid Anatomy.*—Senn says, "As an inflammatory infection it is

more correct to speak of tubercular osteomyelitis than tuberculosis of bone, since the medullary tissue and blood vessels which it contains, are the parts that take an active part in the inflammatory process. In bone the granulation tissue undergoes the same series of secondary degenerative tissue changes, as in the lymphatic glands causing in advanced cases caseation, liquefaction of the cheesy material, and suppuration in cases of secondary infection with pyogenic microbes."

It is claimed that tuberculosis of bone seldom develops in the course of pulmonary tuberculosis, but pulmonary and diffuse miliary tuberculosis can be traced frequently to a tuberculous osseous focus. Volkman claims that a child suffering from grandular tuberculosis has a good chance to become the subject of osseous tuberculosis during adolescence, and to die of pulmonary tuberculosis before the age of 30. The clinical history of cases of tuberculosis of bone, as well as the macroscopical and microscopical appearance of the lesion, are typical of tuberculosis as found in other organs.

Investigators claim that in tubercular bone affections it is sometimes very difficult to find the bacillus and sometimes it has evaded the most careful search.

Konig says that all cases of osteo-tuberculosis can be arranged under four principle groups, according to predominating pathological condition of lesion.

1. The granulating focus.
2. The tubercular necrosis.
3. The tuberculous infract.
4. Diffuse tuberculous osteomyelitis.

The granulating focus presents single or multiple, round or oval cavities, from the size of a millet-seed to that of a pea or hazelnut, containing living embryonal tissue, or, if this has been destroyed by coagulation, necrosis and caseation, a yellowish gray cheesy material or liquid tuberculosis pus will be found.

Tubercular necrosis necessarly follows if the infected area exceeds the size of a hazelnut. If the necrosed bone has undergone no reduction in size, and the granulations surrounding it are few, it remains wedged in position, and under such circumstances it is often difficult to locate the exact boundary line between it and the surrounding healthy bone, or to dislodge it from its position.

The tubercular infract is only another form of tubercular necrosis and is separately classified, because the necrosed bone is always wedge shaped, and the necrosis has been caused by the impaction of an embolus containing tubercle bacilli in a distal branch of a nutrient artery.

The diffused form of tubercular osteomyelitis is quite rare. The pathological and clinical characteristics of this form of local tuberculosis consists in their rapid local extension of the affection and the danger to life from general infection.

*Symptoms and Diagnosis.*—Quite extensive osteo-tuberculosis may be present and the patient give every indication of perfect health. If the thermometer shows a normal morning temperature but a slight elevation toward evening and continued for weeks, it indicates a careful search for local tubercular focus. Progressive anemia is always an unfavorable symptom, as it indicates either the presence of additional foci in the important organs or accompanies the exhaustive purulent discharges after secondary infection with pus microbes. The local symptoms vary according to the location, condition and size of the tubercular focus and the presence or absence of complications. Pain is an almost constant symptom, but its intensity is subject to great variation. It may be stated as a rule, that intensity of the pain bears a direct relationship to the acuteness of the inflammatory process. The pain is not always referred to the seat of lesion. Tubercular osteomyelitis of the head and neck of the femur gives rise to pain in the region of the knee joint, and children suffering from tuberculosis of the spine usually refer all the suffering to the stomach or some other part of the abdomen supplied with nerves that take their exit from the spinal canal at a point corresponding with the inflammed vertebra.

The existence of tenderness over a point corresponding to the tubercular focus in the exterior of a bone, is one of the surest indi-

cations of osteo-tuberculosis. If more than one focus is present in an epiphyseal extremity of a long bone, the number of tender points will correspond with the number of foci in the bone.

Oedema is usually not well marked even if the abcess is large unless secondary infection with pyogenic microbes has occurred. The diffuse form of osteomyelitis is always attended by a plastic osteomyelitis, and consequently the early appearance of external swelling is one of the points to be taken into consideration in differentiating between the different forms of osteo-tuberculosis.

The skin over a tubercular focus in the interior of a bone or over a tubercular abcess presents a normal appearance until it has become infected and shows other unmistakable signs of tuberculosis.

Muscular atrophy is almost a constant symptom in osteo-tuberculosis as well as tubercular synovitis.

The presence of a tubercular focus in the interior of a bone can often be demonstrated by an exploration with a strong needle of hyperdermic syringe, if the density of the bone has been diminished by chronic inflammation.

If the cavity contain granulation tissue little fragments of this can be drawn into the needle and with these inoculation experiments for diagnostic purposes can be made.

Many cases of primary tuberculosis of bone have been taken for synovial tuberculosis of bone and vice versa.

In primary synovial tuberculosis the first pathological changes occur in the joint, and no tender points will be found in the epiphyseal region.

In osteo-tuberculosis not complicated by the disease to the adjacent joint, it is usually not difficult to ascertain the distance of circumscribed points of tenderness which correspond to the location of the foci.

*Prognosis.*—"On the whole," says Senn, "The prognosis is more favorable in osteo-tuberculosis than if the tubercular infection is located in the skin, a joint, lymphatic gland or any other internal organs."

Spontaneous healing of a tubercular focus in bone is possible under favorable conditions. If the patient is well nourished, and above all, if the blood is in a normal condition, limitation of the disease may occur before caseation has taken place; and if cheesy material has formed and can be removed by operative interference, the prospect of a permanent recovery is good.

The prognosis is always more grave, other things being equal, if the bone affected is so located that removal of primary focus by operative treatment is anatomically impossible.

Children are more liable to recover than persons advanced in years.

*Treatment.*—Expectant treatment may be resorted to in mild cases, in order to support the patients, and thereby prepare them for more radical measures later on, if found necessary.

The most important factor in the treatment of inflamed tissues, especially joints, is complete rest and mechanical support.

The surgeon should carefully watch the progress of the disease, and only continue the temporizing treatment so long as the patient seems to get relief by such methods.

The radical treatment of tuberculosis of the bone consists of the complete removal of the infected tissues by operative interferences.

The operation is indicated as soon as a positive diagnosis can be made and milder measures have proved useless in arresting the progress of the disease.

Timely surgical interference in osteo-tuberculosis is not only calculated to become the surest means of preventing general infection, but it also has for its object the limitation of the disease by the removal of the primary cause.

Thus acting as a prophylactic and the same time a curative measure.

The manner of surgical procedure will suggest itself to each operator.

Most thorough work must be done and all the granulation tissue or cheesy material removed. It is important to preserve as far as possible, the periosteum.

Many operators pack the cavity after it has been thoroughly dried and iodoformized with decalcified bone chips. This pro-

cedure is not always necessary in order to secure good results.

When the bone chips are not used it is well to leave the incision widely open and packed with iodoform gauze. The objection to the bone chips is that it is not always possible to remove all the disease tissue and in this case the bone chips will do more harm than good.

There need not be any fear of perfect results after very extensive operation on diseased bones, if the incision is left freely open and packed with antiseptic gauze.

The limb must be immobilized by applying a well padded posterior splint. Time will not permit the consideration at any length, of diseases of joints.

With the exception of circumscribed points of tenderness outside of the region of the joint that indicates the existence of primary and osteo-tuberculosis, we have no symptoms which enable us to make a positive diagnosis between a primary osteal and a primary synovial tuberculosis of the joint. The primary osteal form is the most common.

Pain as a symptom although present is of extremely variable intensity.

As a point in differential diagnosis, it may be said that in osteal tuberculosis, pain is present from the beginning in the bone, and is not aggravated by the joint disease; while an almost painless primary synovial tuberculosis is attended by severe pain, with nocturnal exacerbations as soon as the synovial membrane and articular cartilages have been destroyed and the bone has been secondarily implicated in inflammatory process. The prognosis of tubercular joint disease is usually unfavorable.

A spontaneous cure is likely to take place if the patient is young, not anemic, and at the same time well nourished.

The hygienic surroundings must also be taken into consideration in rendering a prognosis.

*Treatment.*—As in cases of osteo-tuberculosis, rest is an important element in the treatment of tubercular joints.

The limb should be immobilized by the use of a plaster of Paris splint, which does not necessarily confine the patient to his room or bed.

In tuberculosis of the knee-joint, the splint should extend from the toes to the groin, and in ankle-joint affection from the toes to the knee-joint.

The immobilization is to be made with the limb in such a position that in case the joint should become permanently stiff, the limb can be used to the greatest advantage.

If the arthritis has already resulted in contractures, the treatment by extension should be continued until the limb has been brought in proper position for treatment by immobilization. When the capsule of the joint is distended by intra articular infusion the joint should be aspirated.

In tubercular hydrops and abcess of a joint, subcutaneous evacuation of the fluid contents followed by iodoformization, yields more satisfactory results than simple aspiration.

Some surgeons open the joint, evacuate its contents and then treat the joint by iodoformization.

Excision of the infected tissues in primary tuberculosis of the synovial membrane has been practiced for a number of years, and the result of this treatment has been quite encouraging.

Amputation of the joint may be found necessary in some cases. Especially is this true if the tubercular abcess has perforated the capsule of the joint and has extensively infiltrated the surrounding tissues. This condition is to be expected if the limb has become oedematous some distance from the joint.

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**Topeka, Kansas, Saturday, March 20, 1897.**

WE wish to again call the attention of our readers to the approaching time for the next meeting of the State society. A successful meeting depends upon individual work among the members. Too often the officers and committees are expected to do what ought to be done by the members. If each member of the society will try to bring some one with him to the next meeting and will either write a paper or secure some good man of his acquaintance to write one we will have an excellent meeting. Another thing that occurs to us now is the matter of finances. The society cannot be expected to print expensive reports and furnish them to each member unless the dues are kept up. The expense of reporting and publishing these reports is no small matter and some plan should be suggested by which the outstanding dues can be collected. No report has been published this year because there were no funds in the treasury to do it with.

## Women in Medicine.

Women are important factors in medicine. Not so much from the work they do in practice as the importance they are to the general and special practitioner in the makeup of his business. It is hardly an exaggeration to say that the bulk of practice comes from the women. The men and the children are occasionally callers upon the physician's skill, but not near so frequently or so constantly as women. The wife and mother is apparently the victim of many ailments. She is at least treated for many, and altogether too frequently comes under the class of chronics. Naturally when she begins to complain uterine trouble is suspected and it is not hard to find. A long period of uterine treatment giving no relief she is subjected in turn to all the special and general treatments in the usual line. She is the source of income to the doctor, and occasionally calls heavily upon the purse of her husband. This is so much true, that in some instances, or in some localities, a lady must consult her physician regularly or be tabooed from the best society.

But we must all admit that there are too many ailing women. There are so many that it would be poor policy to attempt to relieve all of them by castration if that were a sure remedy. In the wisdom of our gynecologists a great many women have been castrated, but there can be no question that in some instances, and perhaps many, the operation was not only not necessary but resulted in no benefit. Without denying the value of uterine treatment or the necessity of operation in cases where it is necessary we wish to insist that many of the chronic female patients need an altogether different plan of treatment. One of the great essentials of good health is good nutrition and one of the most essential elements of good nutrition is plenty of oxygen and outdoor exercise. The woman often offers for an excuse for not going out that she is already fatigued with her house work, but if we can convince her that a short

walk in the fresh air will rest her, we have secured a valuable point in the prevention and cure of many female complaints. Air and exercise of the proper kind will many times restore cases that uterine treatment, medicine, and even castration have not benefitted. We have in mind a case which had passed through the hands of several physicians finally to be castrated, yet with little relief. A trip to the lakes and an every day system of outdoor exercise worked a wonderful change in her appearance and feeling and brought, in her case, what the science of medicine had failed to bring. The woman who is confined to her home from no matter what cause, must in the end suffer from mal nutrition and all the physiological functions are to some extent disturbed, and it is too often a fault with the profession to ascribe the cause to an apparent or real uterine trouble. A disturbed heart action either of an organic or functional character is often the cause of disturbances in the uterus which local treatment will not relieve. It is not by any means always good diagnosis to ascribe a functional heart trouble to an existing utering lesion, for it may prove just the opposite.

We wish to emphasize particularly the relation between functional disturbances and mal nutrition. We believe the successful treatment of many of our chronic female patients depends upon our recognition of these points.

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IT is probable that whose who attend the State society in May will have an opportunity to hear one or two of the most prominent medical men in the country. As soon as arrangements are perfected the announcement will be made.

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FOR chapped hands:

℞ Menthol, grs. viij.
Salol, grs. xvi.
Ol. olivæ, gtts. xiv.
Lanolin, ℥ i.

M. Sig.: Apply night and morning after thoroughly washing hands.

## MISCELLANEOUS.

### Second Annual Meeting of the Western Ophthalmological, Otological, Laryngological and Rhinological Association.

The second annual meeting of the above association will be held at St. Louis, Mo., April 8 and 9, 1897, at the Planters Hotel.

Thursday April 8—9 a.m.

Address of welcome by Dr. W. J. Langan, president St. Louis Medical Society.

Response by Dr. A. C. Corr, president Illinois State Medical Society.

President's Address: Hæmorrhagic Glaucoma, Dr. Adolf Alt, St. Louis, Mo.

Reception of guests.

Registering and payment of dues.

Report of the secretary and treasurer.

Election of members.

A cordial invitation is extended to the profession. The railroads have promised 1 and ⅓ fare. When buying tickets ask for a certificate, on reaching St. Louis have it signed by Dr. Alt.

PRESENTATION OF PAPERS.

1. Report of Six Cases of Removal of Ossicles—Dr. Norval H. Pierce, Chicago.

2. A Pyramidal and Senile Cataract in One Subject, Report of a Case—Dr. Geo. F. Suker, Toledo, Ohio.

3. A Case of Oculo Motor Paralysis— Dr. Geo. E. Bellows, Kansas City, Mo.

4. Adenoid Vegetations—Dr. Ellet Orrin Sisson, Keokuk, Iowa.

5. Some Observations Upon the Irritating Effects of Natural Gas Upon Trachoma—Dr. John Johnson Kyle, Marion, Ind.

6. Treatment of Chronic Suppuration of the Middle Ear—Dr. S. S. Bishop, Chicago.

7. Astigmatism—Dr. Dudley S. Reynolds, Louisville, Ky.

8. Diseases of the Glosso Epiglottic Space—Dr. J. F. Barnhill, Indianapolis, Ind.

9. The Classification of the Exudative

Anginæ—Dr. E. B. LaFevre, Abilene, Kas.

10. Skin Grafting for Malignancy of the Orbit and Entropion—Dr. Flavel B. Tiffany, Kansas City, Mo.

11. Restoration of the Eyelids by Skin Grafting—Dr. W. C. Tyree, Kansas City, Mo.

12. An Improved Skiascope—Dr. J. Ellis Jennings, St. Louis.

13. Scopolamine as a Mydriatic and Cycloplegic—Dr. Wm. S. Fowler, Chicago.

14. Optic Neuritis—Dr. F. C. Evans, Louisville, Ky.

15. Report of a Case of Congenital Membraneous Cataract with Aphasia—Dr. R. S. Magee, Topeka, Kas.

16. Moderate Errors of Refraction; Shall We Always Correct Them?—Dr. Albert E. Bulson, Fort Wayne, Ind.

17. Conservatism in Rhinological Practice—Dr. B. M. Berens, Minneapolis, Minn.

18. Mental Depression and Prolonged Melancholia Following Graduated Tenotomy and the Limitation of Prisms—Dr. W. H. Baker, Lynchburgh, Va.

19. Report of a Case of Double Mastoid Disease, Operations, Recovery—Dr. J. O. Stillson, Indianapolis, Ind.

20. The Technique of Cataract Extraction—Dr. B. E. Fryer, Kansas City, Mo.

21. Diseases of the Labyrinth—Dr. J. Holinger, Chicago.

22. Keratoconus—Dr. J. W. Bullard, Pawnee City, Neb.

23. A Case of Inflammatory Glaucoma of Reflex Nasal Origin—Dr. J. Aloysius Mullen, Houston, Tex.

24. Syphilitic Amblyopia—Dr. Robert F. Lemond, Denver, Colo.

25. Congenital Nystagmus—Dr. J. Elliott Colburn, Chicago.

26. Objective Noises in the Ear—Dr. G. Sterling Ryerson, Toronto, Can.

27. Function of the Stapedius and Tensor Tympani Muscles—Dr. Thos. F. Rumbold, St. Louis.

28. Saline Injections in the Treatment of Cyclitis and Iritis—Dr. S. L. Ledbetter, Birmingham, Ala.

29. Paper—Dr. W. E. Gamble, Ghicago.

30. College Instruction in Ophthalmology—Dr. A. M. Lapsley, Keokuk, Iowa.

31. The Value of Hypnotic Suggestion in Ophthalmic Practice—Dr. Ignatz Mayer, Guthrie, Okla.

32. Description of Dr. McCassy's Trial Frame, Lachrymal Style and Threaded Handle—Dr. J. H. McCassy, Dayton, Ohio.

33. The Lens Tester and Why Used—Dr. J. H. Johnson, Kansas City, Mo.

34. The Etiology, Treatment and Prognosis in Exophthalmic Goitre—Dr. J. Fred Clark, Fairfield, Iowa.

35. Extraction of Bilateral Soft Cataract in the Case of a Child Three Years Old—Dr. J. O. McReynolds, Dallas, Texas.

Friday, April 9.

1. Two Cases of Asthma Due to Intra-Nasal Growths—Dr. W. W. Bulette, Pueblo, Colo.

2. Aural Pain—Dr. A. M. Howe, Wichita, Kas.

3. Influence of Vaporized Medicaments on the Respiratory Passages—Dr. Homar M. Thomas, Chicago.

4. Hysteria in Ophthalmology—Dr. W. L. Dayton, Lincoln, Neb.

5. Otitis Media Circumscripta—Dr. C. M. Holcomb, Winfield, Kas.

6. Ulcers of the Cornea—Dr. H. Z. Gill, Pittsburg, Kas.

7. Paper—Dr. J. D. C. Hoit, Elmwood, Ill.

8. Paper—Dr. Frank Allport, Minneapolis, Minn.

9. Hypertrophic Rhinitis—Dr. W. T. Grove, Eureka, Kas.

10. The Relative Value of Enucleation and and Evisceration—Dr. A. R. Amos, Des Moines, Iowa.

11. Paper—Dr. C. W. Kollock, Charleston, South Carolina,

12. A Plea for More Mild Treatment of the Conjunctiva—Dr. E. W. Ames, Canton, Ill.

13. Paper—Dr. Geo. Knapp, Vincennes, Ind.

14. Thrombosis of the Lateral Sinus—Dr. B. F. Church, Dallas, Texas.

15. Notes on Nasal Surgery—Dr. A. E. Prince, Springfield, Ill.

16. Paper—Dr. K. K. Wheelock, Fort Wayne, Ind.

17. Chronic Rhinitis as a Factor in Weakened Vision—Dr. Joseph A. Daniel, Davenport, Iowa.

18. Paper—Dr. Chas. H. Beard, Chicago.

19. Treatment of Corneal Lesions by Hydraulic Curetting with Sublimate Solutions—Dr. C. H. Pleasants, Helena, Mont.

20. Paper and Demonstrations: Advanced Methods in Teaching the Deaf—Dr. M. A. Goldstein, St. Louis.

Discussion opened by Prof. S. T. Walker, Jacksonville, Ill.

21. Three Cases of Suppuration of the Frontal Sinuses Treated by Means of the Air Douche—Dr. P. F. Gildea, Colorado Springs, Colo.

22. Toleration of the Eye to Severe Injuries—Dr. H. G. Sherman, Cleveland, Ohio.

23. A Case of Mastoiditis Complicating Purulent Otitis Media Cured by Enlarging the Drum Perforation and Syringing the Tympanic Cavity—Dr. Wm. Sheppegrell, New Orleans, La.

24. The Relationship of Obscure Throat Symptoms in Adults to the Pharyngeal Tonsil—Dr. H. Moulton, Ft. Smith, Ark.

25. Suppurative Inflammation of the Frontal Sinuses—Dr. Frank E. Sampson, Creston, Iowa.

26. Experiments on the Eustachian Tubes by Means of the Tongue Thrust Into the Naso-Pharynx — Dr. Hamilton Stillson, Seattle, Wash.

27. Atrophic Rhinitis—Dr. I. Cullen, Cincinnati, Ohio.

28. Artificial Membrana Tympani—Dr. E. W. Heltman, Toledo, Ohio.

29. Otitis Media—Dr. E. M. Singleton, Marshalltown, Iowa.

30. Paper—Dr. F. E. Waxham, Denver.

31. Throat Manifestation of Transmitted Syphilis—Dr. H. W. Whitaker, Columbus, Ohio.

32. Relative Value of the Various Treatments for Deafness Due to Otitis Media—Dr. J. F. Oaks, Chicago.

33. Eustachian Catarrh—Dr. M. Jay Brown, Salina, Kas.

34. Nitrate of Silver—Dr. Chas. E. Walker, Denver, Colo.

35. Paper—Dr. J. H. Martindale, Minneapolis, Minn.

36. Paper—Dr. F. C. Heath, Indianapolis, Ind.

37. Paper—Dr. Francis B. Kellogg, Tacoma, Wash.

38. Paper—Dr. Allen T. Haight, Chicago.

39. Lymphadenoma with Report of Cases—Dr. C. W. Parker, St. Louis.

40. Paper—Dr. D. Emmett Welsh, Grand Rapids, Mich.

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## The Plague.

The following is from an editorial in the *Medical Record* of February 13.

"The disease now scourging Bombay is probably the same as that which occurred in various epidemics in the principal centres of population in Europe in the middle ages, although it is possible that several different diseases were formerly called by this name when encountered in epidemic form. The last great epidemic occurrence of the plague in Europe was at Marseilles and in other parts of France in 1870, but the disease has visited Europe several times since then, the last time in the province of Astrakhan in Russia in 1878-79. So little has been heard of it since then that to physicians it has existed merely as a name in medical history. It has never died out, however, but has floated about in Asia, now rising to the dignity of an actual epidemic in one place, again being heard of as occurring sporadically in some distant region seldom visited by Europeans. The present recrudescence was first heard of in Canton in February, 1894, although the disease was known to be prevailing in Southern China for at least fifteen years before that time, usually in sporadic form, but occasionally in local epidemics of extreme malignancy. From Canton the plague passed to Hong-Kong, or perhaps came from some other direction, becoming epidemic in May of the same year. The following year it was heard of again in the same cities, and in 1896 invaded Bombay and other places on the west coast of India.

"There was little doubt that the disease was of bacillary origin, but the demonstration of this was lacking until Kitasato discovered a micro-organism in the blood and en-

larged lymphatic glands. There seems to be some uncertainty concerning the morpholgy of this micro-organism. Kitasato found a bacillus in the blood which resembled the microbe of chicken cholera, apparently surrounded by a capsule, and staining chiefly at the extremities. Aoyama, Kitasato's associate, has suggested that this is really a diplococcus, and not a bacillus. The bacillus found in the glands had rounded extremities, no capsule, and stained quite uniformly. Lowson, who was also working in Hong-Kong at the same time, thought the difference in these two forms was an artificial one, the organism when stained lightly appearing as a diplococcus, but when more deeply stained being seen to be a bacillus. Yersin in Amoy found a bacillus with rounded ends stained well, but more deeply stained being seen to be a bacillus.

Yersin in Amoy found a bacillus with rounded ends staining well, but more deeply at the extremities than in the center. Inoculation experiments by all these different observers have shown the micro-organism to be pathogenic, the inoculated animals succumbing with the symptoms of true plague.

"Europeans and half-breeds are far less frequently attacked than pure-blooded natives, and then apparently only when there has been prolonged actual contact with the sick, as was the case with two nursing sisters who carried sick children in their arms; or when Europeans have remained some time in infected localities, as happened in Hong-Kong when a number of British soldiers were employed in cleaning out the indescribably filthy houses inhabited by Chinese in the infected quarters of the city. Yet even natives, when clean of person and living in clean, well-ventilated apartments, do not seem to be in much danger. Dr. Cantile, in a recent address before the Epidemiological society of London, says that none of the Chinese students in the College of Medicine of Hong-Kong were attacked, although they were on duty, night and day by turns, for six weeks in the plague hospital, and were during that time in constant contact with the sick. None of the European physicians, fifteen in number, in attendance upon the plague patients acquired the disease. Dr. Aoyama had the plague and recovered, but it is not at all improbable that he became accidentally inoculated while prosecuting his pathological and bacteriogical studies. Several of the lower animals suffer from the disease, rats especially. Indeed, the natives in plague districts often predict an invasion of the disease by observing an unusual mortality among rats. In Bombay it is believed that the rats dying of the plague are eaten by ants, and that the latter carry the bacilli to the food or water. The plague has often prevailed in places where there are no ants, but other insects, house flies for example, might readily spread the virus. However the infection is carried, it seems to be very certain that persons, whether foreign born or natives, who are clean and live in well-kept airy apartments and upon nourishing and well-prepared food, are practically immune. In other words, the plague is pre-eminently a filth disease, and one that could gain no foothold in a community where modern sanitary rules govern. It is not a disease which New York, for example, has any reason to fear.

"The disease usually begins abruptly with a chill, or sometimes a glandular swelling is the first sign of infection. Fever sets in early, the temperature rapidly rising to 104° F. or higher. The pulse is weak, sometimes dicrotic, and ranges from 100 to 120. There are the usual accompaniments of adynamic infectious diseases, such as headache, nausea, vomiting, and delirium. The urine is albuminous. The glands are always enlarged, and sometimes their involvement goes on to suppuration. This suppuration seems, however, not to be characteristic of the disease, but rather to be a complication due to the accidential presence of pyogenic bacteria. The glands involved most frequently are those of the axilla, neck and groin, though any of the lymph nodes may be affected. The enlargement frequently occurs in several groups of glands in succession. In rare cases no glandular involvement can be detected during life.

"The mortality of the disease is very

high, sometimes being as great as 95 per cent. of those attacked. In the present Chinese and Indian epidemics the deaths among Europeans were from 18 to 20 per cent. of those attacked. Death usually occurs in from two to eight days. The incubation period has not been definitely determined, but is probably from three to seven days, although there are cases on record which would appear to prove that this period may exceptionately be extended to ten days or two weeks.

"The treatment usually recommended consists wholly in supporting measures, but its efficiency is very doubtful. Yersin claims to have elaborated an antitoxic serum of great efficacy, and it is said that the government has decided to make use of this in Bombay, Yersin being now on his way to India. It is said, however, that it requires six months to prepare the serum; so, unless he has been laying up a supply for the past year, there would not appear to be much relief in sight from this source in Bombay.

"There is a prophylactic possibility in the existence of an affection resembling the bubonic plague, but without its malignancy. This disease, pestis minor, which prevails at the present time in Calcutta, is of epidemic character, and is characterized by polyadenitis, and shows in the blood and glands a bacillus very like Kitasato's, but it is attended by a low death rate. It is possible that this may be an attenuated form of the plague, related to it perhaps as cow-pox is to small-pox. If so, it may be that inoculation with pestis minor will be found to confer immunity against the bubonic plague."

## Meeting of the Missouri State Medical Association.

Present prospects are that the meeting of the Missouri State Association this year is going to prove very satisfactory. The committees have all gotten to work early which is a good indication. The commitee on scientific communications is always in receipt of titles in numbers and characters sufficient to insure the program scientifically attractive. The executive committee are enabled to announce the following program, the details of which only remain to be completed. The association will meet in St. Louis, May 18, 19 and 20. All the first, the second and the third day until noon will be devoted to the scientific program. On the evening of the first day the association will as a body attended a session of the Illinois Society in East St. Lous. On the evening of the second day the Illinois Society will attend as a body as a body a session of the Missouri Association, after which there will be a banquet and reception. On the third day both bodies will adjourn and join in a steamboat excursion on the river.

## Vaccination Against Typhoid Fever.

British Medical Journal.

Pasteur has made a revolution not only in pathology but also in treatment. If it is true that we are now prone to regard every acute disease as the effect of some living poison, it is true also that we are proportionately hopeful to discover an antidote for each. The microbe which was thus assailed, bacillus tuberculosis, has indeed hitherto disappointed us, and still refuses to acknowledge a specific remedy. But anthrax, hydrophobia and diphtheria may certainly be counted successes, and we have good grounds for hoping the same of M. Haffkine's attack on cholera. In one of these, diphtheria, it is the antidote that is directly attempted. But in the rest—for hydrophobia is no exception—immunization of the animal or man and prevention of the symptoms is the aim, and the method is by the injection of a weakened microbe to produce without danger a condition resembling that after recovering from the disease itself. These diseases are so acute and severe that we are forbidden to hope that cure would often be possible. The worst cases of diphtheria show us that even in a disease usually curable a grave attack is stronger than are we. Prevention is the most hopeful method of the two, though, it, too, has this draw-

back, and we cannot tell with certainty how long the immunity will last. The latest extension of this method is given in the paper printed by Professor Wright and Surgeon-General Semple in the *British Medical Journal* of January 30. Their method of weakening the vaccine is by killing it; their proof of its action is the disturbance, both local and constitutional, that is produced by its injection into man, and their test of its immunizing efficacy is the sedimentative power which it given to the blood. The blood of a patient recovering from typhoid, if mixed with a small quantity of typhoid culture, makes the typhoid bacilli which were before swarming throughout the fluid collect into clumps, cease to move, fall to the bottom, and become spherular. In other diseases it is known that animals whose blood has been given "sedimentary power" resist the specific microbe which they can thus precipitate. In typhoid it is impossible to adduce this proof because animals cannot be given typhoid fever, and it must, therefore, remain a matter of inference from analogy. Yet typhoid is so severe a scourge to man that a trial should, if possible, be made of any means of prevention that is not itself a danger. Typhoid vaccination, as set forth in the paper we have quoted, is not without unpleasant effects. Locally it produces considerable swelling and tenderness, which may extend from the flanx into the armpit and groins, and last for forty-eight hours. The constitutional symptoms are faintness and nausea, loss of appetite, fever and restlessness. These symptons ceased after forty-eight hours, but in three out of eleven cases there was some impairment of general health for as long as three weeks. In all probability a little practice will enable these unpleasant effects to be prevented. At any rate they are minor matters, and we think that if a man knew he were likely to be exposed to the infection of typhoid he would act wisely if he submitted to be vaccinated by this method. We hope that some opportunity of an extended trial will be afforded.

## The Treatment of Pus in Pelvis.

Medical Review of Reviews.

Dr. W. E. B. Davis presented a paper on this subject at the Tri-State Medical Society of Alabama, Georgia and Tennessee. He said that the French surgeons reported their inability to remove the appendages in some cases of vaginal hysterectomy for pus in the pelvis, but that the patients recovered, which demonstrated that drainage would cure many cases of pus in the tubes and ovaries. Vaginal incision for pus in the pelvis, not confined to the tubes, had been practiced for a long time with good results. A considerable number of such cases required no further surgery. He claimed that large pus tubes and ovarian abscesses could be drained through the vagina with permanent recovery, in a good proportion of cases, where vaginal hysterectomy is recommended so highly by the French surgeons. If not relieved, the patient's condition would be better, and later on an abdominal operation could be done, and the diseased appendages removed. It is very exceptional that the uterus will have to be extirpated.

Dr. J. A. Goggans opened the discussion on these two papers by saying that he followed the practice of Dr. Davis. He thought we should be very conservative, and seriously consider harmful sequelæ of complete ablation of genital organs in young wemen. Every appropriate treatment was justfiable when we consider the great variety of pathological conditions. He recognized three methods of treating pus in the pelvis:

1. Simple incisions with drainage through the vagina or abdomen.
2. Opening abcess by laparotomy.
3. Opening abcess per vaginam.

Each applicable to suitable cases. He related a case of laparotomy drained finally through the vagina followed by irrigations, recovery; also, one of large pelvic abcess, which ruptured during examination. An immediate laparotomy saved the patient.

Dr. Haggard said that conservative methods should be exhausted. In a recent case he had opened pus tubes, and did not remove

the uterus. In chronic cases the uterus becomes diseased, and will cause untold misery. Here was the only difference between Drs. Davis and Goggans and himself. The cases which rupture per rectum or vagina and undergo spontaneous cure occur in country districts, and are not cases of gonorrhea.

Dr. Davis said that Dr. Haggard was sustained by many eminent men in his position. When these organs are removed, there is a condition of the nervous system which causes a little suffering to be exaggerated to an excruciating pain. Gonorrhea is not the dangerous disease some would have us believe. He thought a large proportion of these cases could be cured without removing the uterus, which is an important organ after removal of ovaries and tubes. A woman is thus more natural, and the vagina does not shrivel up.

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## Is There a Uric Acid Diathesis?

Medical Press.

In spite of multitudinous researches into the nature and causation of gout and allied manifestations, so much obscurity remains, that inquirers on fresh lines are welcome, even when one is unable altogether to acquiesce in their "statement of claim." To Dr. Haig, we believe, is due the credit of having been the first to call attention to the fact that large quantities of uric acid are directly introduced with and in the ordinary food of man. This may be eliminated in the urine, failing which, over-saturation of the blood is followed by the deposition of the acid in the tissues. This is a distinct advance in our knowledge of the pathology of gout, and what may be termed uric acid manifestations; but Dr. Haig proclaims that virtually all the mischief-making uric acid is thus introduced, the quantities produced in the healthy human body being inadequate to the production of morbid symptoms. He admits, however, that uric acid may be, and indeed is, normally produced in the normal organism, in the proportion of 1 part to 33 of urea. He believes the ratio to be unalterable, but this can only be proved by prolonged observation by independent observers. In any event, the fact that uric acid can be elaborated in the human body renders it possible, if not probable, that under particular conditions the output may be so increased as to constitute a pathological condition. We are not concerned to deny the importance of discarding any avoidable addition to the proportion of uric acid already present in a given case, but it has not yet been conclusively proved that it is impossible, even in the absence of alimentary uric acid, for sufficient quantities to be formed to give rise to a deviation from health. All animal tissues contain uric acid or substances of the xanthin group, and the alkaloids of tea, coffee, and cocoa are also xanthins, and therefore to be avoided. The ideal diet of a person who would still be currently described as suffering from the effects of the uric acid diathesis would have to be restricted to milk and cheese, bread stuffs cereal foods and the pulses, such as peas, beans, lentils and the like. The exclusion of articles of food containing uric acid, in association with the administration of drugs which are recognized to facilitate the solution of this intractable substance, allows of the excretion of arrears of uric acid, and when the surplus has been disposed of the effects disappear. *Sublata causa tollitur effectus.* There are, however, a number of facts which do not fit in with Dr. Haig's hypothesis. Stone, for instance, is very common in certain parts of India, where the natives nevertheless live exclusively on just such a diet as that recommended by him by reason of its freedom from uric acid constituents. Then, again, certain subjects, especially children, continue to excrete large quantities of uric acid in spite of the most careful dieting, and in certain diseases, such as leucocythæmia for instance, the excretion is always largely in excess, whatever the diet. The first thing to do in elaborating such a hypothesis is to obtain a general agreement as to the facts on which it is based, and sufficient time has not yet elapsed since these ideas were promulgated for this to have been accomplished in respect of the conditions under which uric acid production

is modified by diet. It is quite possible, as suggested by one of the speakers during the recent discussion at the Medical Society of London, that there are two distinct conditions which have as a common factor an excessive excretion of uric acid, one in which the over-production is the result of dietetic errors, and is consequently readily amenable to dietetic measures, and a second in which the over-production is due to a hereditary defect in tissue metabolism, and is only modified by diet to a limited and variable extent. If this be so, the term diathesis will have to be restricted to cases coming into the second group.

## Serum Treatment of Leprosy.

This method, which originated with Dr. Carrasquilla, he has successfully empoyed in fifteen cases, and it promises to prove a panacea in this disease. The conclusions from the cases treated are thus summarized in the *Indian Medicul Record:*

1. The serum treatment overcomes the anesthesia more or less rapidly, in proportion to the extent and gravity of the lesions of the peripheral nerves.

2. It decolorizes the macules without obliterating them entirely; they become the seat of abundant desquamation.

3. It causes edema to disappear rapidly in some cases, slowly in others; the skin retracts, becomes wrinkled, and finally returns to its normal state when the edema has subsided.

4. The tubercles becomes flattened and softened, and disappear, either by absorption by desquamation, or by suppuration, leaving marks to show their situation.

5. After suppurating abundantly, the ulcers heal with marvelous rapidity, leaving the skin sound.

6. The scars of old suppurative lepromata become pale, and tend to assume a level with the surrounding skin.

7. The ulcerated mucous membranes hasten to cicatrize, become decolorized like the cutaneous macules, and regain their sensibility, while the tubercules disappear.

8. With the disappearance of the edema and the tubercules, and with the fading of the stains, the countenance grows thin, and loses its leonine aspect entirely.

9. The appetite is recovered, together with the capability of sleeping; there is cheerfulness and content replacing the previous profound depression, and lost hope is regained.

10. From the first serum injection administered to the patient, the morbific action of the bacillus lepræ leaves, and no new manifestation of the disease shows itself.

## Drugs Not Everything.

Yale Medical Journal.

The successful practitioner is one who is not only capable of recognizing disease in all of its manifestations, but is also a deep student of the different psychical states of the one under his care and who bases treatment upon a rational consideration of the idiosyncrasies and characteristics of the patient. The psychical effect produced upon the patient in many instances plays as important a part as the physical in the treatment of disease. Therefore in the management of patients, the doctor should not fail to avail himself of every legitimate aid to gain the desired psychical effect, and there is none so important as the individuality and personality of the physician himself.

This subject is not new. Much has been said and written upon these lines. Recently a new impetus has been imparted to the discussion by articles in the medical press and we would add our voice to the march of progress. The physician who trusts entirely to his pharmacopœia will in many cases fail, no matter how perfect his knowledge of therapeutics. A highly civilized people are affected largely by their psychical impressions, the American people exceptionally so.

This fact should be forever paramont in the mind of the practitioner of medicine. If a drug is administered by the physician with the impress of certainty of action the course of the disease will often be governed

and decided by this psychical effect. To accomplish this the physiciah should strive to obtain the complete confidence of his patient; he should avoid all appearance of hesitancy or uncertainty; he should be gentle, decisive, commanding, and present moreover, a perfectly disciplined temper.

The courage to break down the fetters of antediluvian opinions in regard to health or treatment with which the patient may be bound; the independence to act firmly as his scientific knowledge may indicate, are characteristics too often lacking to the practitioner of the present time.

## Twelfth International Medical Congres.

In a letter dated Moscow, February 14, the secretary general, Prof. W. K. Roth, communicates the following facts for the information of the American physicians who intend to participate in the Twelfth International Congress which is to be held at Moscow from August 19 to 26.

The Transatlantic steamship companies refuse one and all any reduction of the usual charges. In their replies most of which are couched in courteous languages (the originals are in the posession of the undersigned), they admit the existence of a trust, or contract, or agreement which prevents them from lowering their prices; a few are so polite as to express their regrets.

Reductions of fares on Russian railroads are expected shortly. The French, Spanish, Sweedish and Hungarian railroads promise a reduction of 50 per cent.; so do the Italian for a distance of 500 kilometres; less (down to 30 per cent.) for shorter distances. The Mediterranean lines (Messageres Maritimes, General Italian Navigation Company, Austrian Lloyd) grant from 25 to 50 per cent.

The undersigned chairman is not authorized to issue certificates of any kind in favor of congressionists. He will try to ascertain, however, in which way their movements may be facilitated, and may receive a reply in the second half of April. Extracts of papers to be read before any of the sections ought to reach the secretary general before June 1 in order to be printed in the preliminary volume.

A special prospectus containing the final details referring to traveling, lodging, festivities, etc., is promised for a near future. It will be communicated at once to the medical journals, and to the press of the country.

A. JACOBI,
*Chairman for America.*

## For Standard Remedies, the Medical Effects of Which, Physicians May Fully Rely On.

*Dioviburnia.*—The most powerful and trustworthy nterine tonic attainable, (of which the most eminent gynecologist bear testimony) in dysmenorrhea, amenorrhea, menorrhagia, leucorrhea, subinvolution, threatened abortion, vomiting in pregnancy, chloro is, etc.

*Neurosine.*—The standard neurotic, anodyne and hypnotic, unexcelled in hysteria, epilepsy, neurasthenia, mania, chorea, uterine congestion, nigraine, neuralgia and all convulsive and reflex neuroses, containing no chloral or morphine.

*Palpebrine.*—Is what the name would indicate, a most reliable remedy for external eye diseases, highly recommended in simple, acute and chronic catarrhal, venereal, blenorrheal and strumous or scrofulous conjunctivitis, marginal blepharitis and inflammation of the lachrymal sac and other external inflammation of the eye. Palpebrine in the hands of the general practitioner will enable him to treat successfully the external affections of the eye without having to send such cases for treatment to the specialist.

*Sennine.*—Is unexcelled as a dry antiseptic dressing and is a specific in the treatment of old sores, ulcers, bubo, fczema pruritus, burns, scalds, etc., whenever a dry antiseptic dressing is applicable, being entirely odorless will save both the practitioner and the patient disagreeable odors as well as those they come in contact with. Sennine is a very fine white powder put up in two ounce perforated top boxes, making it convenient to apply upon would surface.

These four products are manufactured by the Dios Chemical company, which is sufficient guarantee that they are entirely reliable and contain such drugs as the formula of each indicates, which they freely circulate to the profsssion only.